

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/622,424	HIRANO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Wenpeng Chen	2624	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE filed on 1/4/2005.
2. ☒ The allowed claim(s) is/are 9-24 (now renumbered as 1-16, respectively).
3. ☒ The drawings filed on 17 May 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|   | 9. <input type="checkbox"/> Other _____.   |

Wenpeng Chen  
Primary Examiner  
Art Unit: 2624

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/4/2005 has been entered.

***Examiner's Amendment/Statement***

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

3. The followings are amended by the Examiner so the specification satisfies rules of MPEP -- description being needed for each figure.

**Amendments to specification:**

-- Replace [Fig. 2 illustrates] in line 6, page 33 to - Figs. 2(a), 2(b), 2(c), and 2(d) illustrate -.

-- Replace [Fig. 3 illustrates] in line 8, page 33 to - Figs. 3(a), 3(b), 3(c), and 3(d) illustrate -.

Art Unit: 2624

-- Replace [Fig. 6 illustrates] in line 14, page 33 to - Figs. 6(a), 6(b), and 6(c) illustrate -.

-- Replace [Fig. 7 illustrates] in line 15, page 33 to - Figs. 7(a), 7(b), and 7(c) illustrate -.

-- Replace [Fig. 8 illustrates] in line 17, page 33 to - Figs. 8(a), 8(b), and 8(c) illustrate -.

-- Replace [Fig. 9 illustrates] in line 18, page 33 to - Figs. 9(a), 9(b), 9(c), and 9(d)

illustrate -.

-- Replace [Fig. 12 illustrates] in line 24, page 33 to - Figs. 12(a) and 12(b) illustrate -.

-- Replace [Fig. 14 illustrates] in line 3, page 34 to - Figs. 14(a), 14(b), and 14(c)

illustrate -.

-- Replace third paragraph of page 34 with the following:

- Figs. 18 through 23, 24(a), 24(b), 25(a), 25(b), and 26 through 28 are illustrations of the prior art. In Figs. 1 through 12, 1 and 2 represent memories; 3 represents a control portion; 4 and 5 represent bit switching portions; 6 represents a write address counter; 7 represents a read address counter; 8, 10 and 11 represent address conversion portions; 12, 13, 14 and 15 represent address switching portions; and 16 represents a read data switching portion. -

4. Authorization for the following examiner's amendment was given on 3/9/2005 and 3/16/2005 by Mr. Mark D. Pratt based on telephone interviews on 3/4/2005 and 3/16/2005. The application has been amended as follows:

**Replace the title as follows:**

HUFFMAN ENCODER FOR ENCODING/DECODING DCT COEFFICIENTS

Art Unit: 2624

**Amend claims 10, 13, and 14 as follows:**

- For Claim 10, replace [storage] with - storages - in line 8.
- For Claim 13, replace [output] with - outputting - in line 10.
- For Claim 14, replace [storage] with - storages - in line 10.

**Replace claims 15 and 16 as follows:**

Claim 15 (Currently Amended): A method of Huffman decoding for decoding Huffman codes into DCT coefficients, comprising the steps of:

performing a Huffman decoding process on input Huffman codes to sequentially output data constituted by combinations of the number of consecutive invalid coefficients and a valid coefficient;

selecting any of the output data and sequentially writing the same in a plurality of first storages;

generating, in common to said plurality of first storages, DCT coefficients based on the data stored in said plurality of first storages and outputting a plurality of the generated DCT coefficients at a time; and

writing said plurality of the output DCT coefficients in a storage at a time.

Claim 16 (Currently Amended): A method of Huffman decoding for decoding Huffman codes into DCT coefficients, comprising the steps of:

Art Unit: 2624

performing a Huffman decoding process on input Huffman codes to sequentially output data constituted by combinations of the number of consecutive invalid coefficients and a valid coefficient;

selecting any of said output data and sequentially inputting the same in a plurality of data storages;

outputting the data from said plurality of data storages in the order of input;

generating, in common to said plurality of data storages, DCT coefficients based on the data output from said plurality of data storages and outputting a plurality of the generated DCT coefficients in parallel;

respectively transferring said plurality of the output DCT coefficients in parallel through a plurality of data buses respectively; and

writing said plurality of the DCT coefficients transferred through said plurality of data buses respectively in a storage in parallel.

***Examiner's Statement of Reasons for Allowance***

5. Claims 1-8 are canceled by the applicants.

6. Claims 9-24 (now renumbered as 1-16, respectively) are allowed.

The examiner's statement of reasons for allowance for Claims 17-24 has already been given in Office Action paper #19 mailed on 8/6/2004.

Art Unit: 2624

The following is an examiner's statement of reasons for allowance for Claims 8-16.

The prior art fails to teach the encoders of Claims 9-10 and the methods of Claims 13-14 that specifically comprise the following features in combination with other recited limitations:

- *reading a plurality of the DCT coefficients stored in the recited first storage at a time (in parallel);*

- counting the number of consecutive invalid coefficients until a valid coefficient is encountered in the DCT coefficients read from the first storage and *sequentially outputting data constituted by combinations of the number of consecutive invalid coefficients and a valid coefficient;*

- *storing the sequentially output data in a plurality of second storages respectively and output the same in order of input;*

- *sequentially selecting any of the data respectively output from said plurality of data storages and outputting the same;*

- *performing a Huffman encoding process based on the data sequentially output from said selector to generate Huffman codes.*

The prior art fails to teach the encoders of Claims 11-12 and the methods of Claims 15-16 that specifically comprise the following features in combination with other recited limitations:

- performing a Huffman decoding process on Huffman codes input to *sequentially output data constituted by combinations of the number of consecutive invalid coefficients and a valid coefficient;*

- *selecting any of the outputted data and sequentially writing the same to a plurality of first storages;*

Art Unit: 2624

-- *generating, in common to the plurality of first storages, DCT coefficients based on the data stored in the plurality of first storages and outputting a plurality of the generated DCT coefficients at a time (in parallel);*

-- writing a plurality of the output DCT coefficients in a storage at a time.

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wenpeng Chen whose telephone number is 703 306-2796 before 3/30/2005 and 571-272-7431 after 3/30/2005. The examiner can normally be reached on 8:30 am - 5:00 pm.

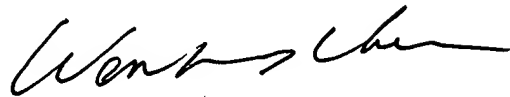
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K Moore can be reached on 703 308-7452. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications. TC 2600's customer service number is 703-306-0377.

Art Unit: 2624

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-4700.

Wenpeng Chen  
Primary Examiner  
Art Unit 2624

May 9, 2005

A handwritten signature in black ink, appearing to read 'Wenpeng Chen', written in a cursive style.